

# Development of Modified System for Round Ring Cloth Peg Assembly

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## ABSTRACT

Clothes pegs are mostly used for hanging a wet cloth for drying. In cloth pegs it consists there are two parts of plastic peg and assemble with round ring. There are separately manufacture of pegs and round ring. This is very tedious and troublesome process, So that research of machine, design and after that fabricated of mechanism for reduced the human effort.

**KEYWORDS:** Plastic peg, CAM, Shaft, Nut & Bolts, Number of Links, Gajan pin, DC Motor, Bending Diagrams, mechanism.

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## INTRODUCTION

Cloth peg are mostly used for hanging a wet clothes for drying in line at overall world. It consist of two plastic peg and one metal round ring or also assembly in U-shaped pin ring is assembled together. They made from plastics, wood, steel etc. Clothe pegs often comes in many different designs and different colours. It is done by workers and machines.



Fig-1: Round ring cloth pegs

## Need of the project

For the inserting a two parts of the clothe peg is very easy. When to developing machine for inserting a ring into cloth peg for reduced an effort for making a job easily and more banalities and to safety of worker.

## Research Methodology

Research methodology to be employed after visiting a plastic peg industry. I see assemble a parts of cloth peg is automated

or semi-automated machine and the cost of the machine is very costly and in last year one engineering student can developed a design a mechanism but this a hand operated mechanism. The used of human effort is more and production rate is less. So my aim is to develop a small machine to reduce their manual efforts make their easy job. So Research and developing a mechanism. I Appropriate mechanism inserting a round ring into the cloth peg.

## CAD MODEL OF THE ASSEMBLY MACHINE

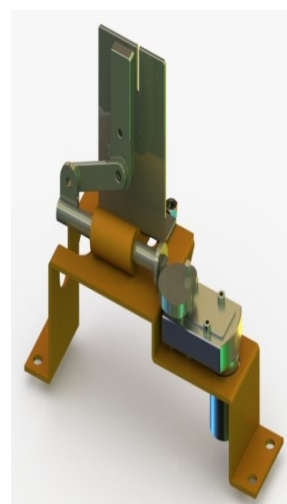
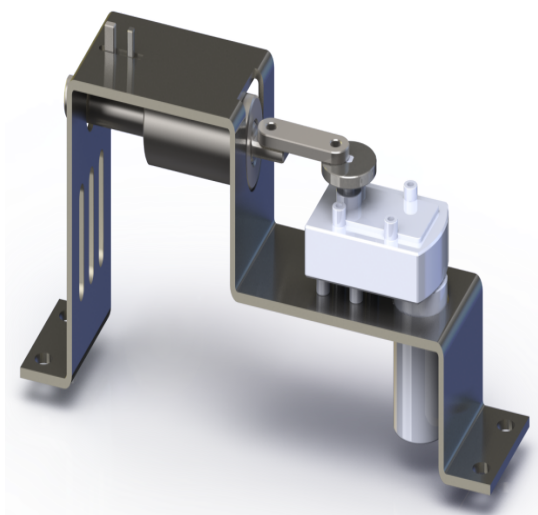


Fig-4: CAD Model of Workstation-I

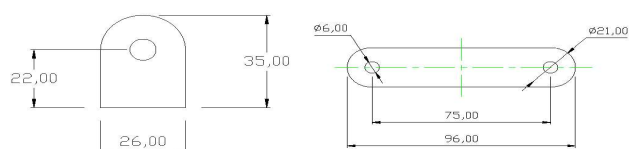


**Fig-4: CAD Model of Workstation-II**



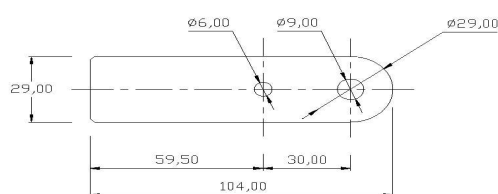
**Fig: Workstation-II**

### Equipments with Dimensions

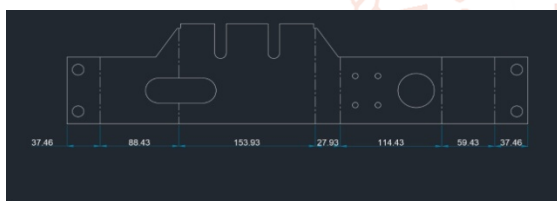


**Fig: Link-I**

**Fig: Link-II**



**Fig: LINK-III/ ARM**



**Fig:- Flat Plate view of Machine**

### Photo Figure



**Fig: Workstation-I**

### Machine working process

The machine consists of a two work station in work stations with arrangement of the motor (geared motor).

Firstly we started the power supply after that to adjust the speed of gear motor and now starting the production of cloth peg.

In workstation-I to start the motor now starting rotation of motor as well as cam the follower started the operation. The link-I<sup>st</sup> link is linear motion and they converted into rotary motion and power transmitted to link-II at one end to other end and this link is power transmitted to Arm.

After that Arm is starting the move and arrange on vertical plate and this the groove(Slot) is present the on the upper side of vertical plate and the dimension of groove(slot) is (25mm\*1mm\*4mm) and metal ring is temporary fitted in slot the mouth(Cut portion of ring) of ring is upper side.

The arm is starting the move at the distance (22-25mm) after the ring is twisted and then the plastic cloth peg and rectangular groove is present in the peg and the peg is inserting the metal ring manually after twisted the metal then I<sup>st</sup> working is finished.

Now, this process is continuously in II<sup>nd</sup> workstation after the peg inserted into the rectangular groove .

The vertical arrangement is is present in upper surface of machine and this vertical metal rod one rod is fixed and another is moveable the cloth peg is fitted into the two vertical bar and the another is starting the move then the metal ring mouth is expanded and then the peg is lightly push down then the ring is directly fitted into the peg then the II<sup>nd</sup> workstation is successfully finished and clothe peg is assemble is finished.

### Conclusion

Cloth peg consists of two plastic parts and a metal ring. The plastic parts and the metal ring are manufactured separately and then assembled together. Assembling of the plastic parts and the ring is a tedious and troublesome process. So, the "Developed of modified system for Round Ring Cloth Peg Assembly Machine" is designed which will reduce the human efforts and increasing a production rate.

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